



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,465	08/13/2007	Hyun Kim	K-0820	3315
34610	7590	09/28/2009	EXAMINER	
KED & ASSOCIATES, LLP P.O. Box 221200 Chantilly, VA 20153-1200			LOPEZ, FRANK D	
ART UNIT	PAPER NUMBER			
	3745			
MAIL DATE	DELIVERY MODE			
09/28/2009	PAPER			

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/584,465	Applicant(s) KIM ET AL.
	Examiner F. DANIEL LOPEZ	Art Unit 3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 06 July 2009.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 2-17 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1 and 18-26 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 6/22/06 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1668)
 Paper No(s)/Mail Date 6/22/06; 5/10/07.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

Election/Restrictions

Claims 2-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim.

Applicant's election with traverse of species IX in the reply filed on July 6, 2009 is acknowledged. The traversal is on the ground(s) that the subject matter of each invention is sufficiently related that a search for one encompasses the search for the remaining inventions (understood to be lack of burden). This is not persuasive because the restriction uses lack of unity practice, not US practice, since the application depends from a PCT. Lack of unity practice does not need to show a burden. Instead it must show lack of special technical features, which was done with the restriction requirement.

A further review of the elected species and claim 2 indicates that claim 2 does not read on the elected species. It would appear that the compression, extension and restoration of the fourth and fifth elastic members (450, 460) of the supplementary torque providing part bends in a direction perpendicular to the parts, which is not along the direction of movement of the piston.

The requirement is still deemed proper and is therefore made FINAL.

Specification

The disclosure is objected to because of the following: Page 15 line 6-9 states "as a force that pushes up the piston 340...is provided to the fourth elastic member 450, the fourth...as well as the first member 460 bend, and relative to this, the upward moving speed of the piston part 340 is delayed"; and line 12-14 states "the connecting rod 330 does not bend at a top dead center, and...the fourth 450 and the fifth elastic members 460 bend little by little in the re-expansion, to provide a force that makes the piston 340 to move down at a fast speed". The examiner understands the first part, since the force of the crankshaft on one side of the connecting rod is balanced by the force of compressing the gas acting on the other side of the connecting rod, and the rod bends. The examiner does not understand the second part, since there is no force acting on the connecting rod to cause it to bend. If anything, there is a force acting to keep it

straight, since the force of the crankshaft and the inertia of the piston act to stretch the connecting rod our, keeping it straight. Therefore, it would appear that the connecting rod of the embodiment of fig 9A-9C would work to allow the speed of the piston to be delayed, but would not allow the speed of the piston to be accelerated. Appropriate correction is required.

Drawings

The drawings are objected to because in fig 9C the fourth and fifth elastic members should be shown as straight, instead of bent (see objection to the specification, above).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

Claims 1 and 18-26 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1 line 10-12, emphasis added "a supplementary torque providing part...**accelerates a speed of the piston in drawing the refrigerant**" appears to be wrong (see discussion above under objection to the specification).

In claim 23 line 1 "the coil spring" has no antecedent basis.

In claim 26 line 1-3, emphasis added, "connecting parts of the connecting rod is connected to the fifth elastic member with **at least one** of joining type selected from bolt, rivet, and welding" appears to be wrong, since it would appear that there is only one joining type.

Claims not specifically mentioned are indefinite, since they depend from claim 1.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1, inasmuch as it is definite, is rejected under 35 U.S.C. § 102(b) as being anticipated by An et al (both KR 2002-20549 and 6595105). An et al (both KR 2002-20549 and 6595105) discloses a compressor comprising a piston (e.g. 36) reciprocating in a cylinder (16), connected to an eccentric part of a crankshaft, by a connecting rod (54); and a supplementary torque providing part (including 64) for reducing a speed of the piston in compression and accelerate a speed of the piston in drawing in refrigerant; with an electric driving part (8) driving the crankshaft.

Claims 1, 18 and 22 are rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103 as obvious over Albarda. Albarda discloses a compressor comprising a piston (5) reciprocating in a cylinder (1), connected to an eccentric part of a crankshaft (6), by a connecting rod (54); and a supplementary torque providing part (including 64) for reducing a speed of the piston in compression and accelerate a speed of the piston in drawing in refrigerant; wherein the

supplementary torque providing part moves in compression, extension and restoration along a direction of movement of the piston (e.g. fig 2); wherein the connecting rod includes first (7, 16) and second (14, 22) connecting parts connected to the piston and eccentric part, respectively; wherein the a supplementary torque providing part includes first elastic coil spring (23) having opposite ends connected to the first and second connecting parts, respectively, and a fifth elastic member (24) inside the fourth spring; but does not indicate whether an electric driving part drives the crankshaft.

Claim 1 is rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103 as obvious over either Friedman et al, DE 2734447, or WO 00-08325.

Friedman et al discloses a compressor comprising a piston (12) reciprocating in a cylinder (11), connected to an eccentric part (16) of a crankshaft (15), by a connecting rod (54); and a supplementary torque providing part (including 19) for reducing a speed of the piston in compression and accelerate a speed of the piston in drawing in refrigerant; but does not indicate whether an electric driving part drives the crankshaft.

DE 2734447 discloses a compressor comprising a piston (2) reciprocating in a cylinder (1), connected to an eccentric part (26) of a crankshaft, by a connecting rod (54); and a supplementary torque providing part (including 4) for reducing a speed of the piston in compression and accelerate a speed of the piston in drawing in refrigerant; but does not indicate whether an electric driving part drives the crankshaft.

WO 00-08325 discloses a compressor comprising a piston (2?) reciprocating in a cylinder (1), connected to an eccentric part (6) of a crankshaft (10), by a connecting rod (4); and a supplementary torque providing part (including 11) for reducing a speed of the piston in compression and accelerate a speed of the piston in drawing in refrigerant; but does not indicate whether an electric driving part drives the crankshaft.

Inherently, crankshafts of compressors are driven by a variety of devices, including an electric motor. Therefore, inherently, the crankshaft of Albarda, Friedman et al, DE 2734447, or WO 00-08325 can be driven by a variety of drives including an electric motor, meeting the claimed limitation. If not, it would have been obvious at the time the invention was made to one having ordinary skill in the art to drive the

Art Unit: 3745

crankshaft of Albarda Friedman et al, DE 2734447, or WO 00-08325 with an electric motor, as one of many appropriate drives.

Conclusion

Claims 19-21 and 23-26 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. § 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Lopez whose telephone number is 571-272-4821. The examiner can normally be reached on Monday-Thursday from 6:00 AM -4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Look, can be reached on 571-272-4820. The fax number for this group is 571-273-8300. Any inquiry of a general nature should be directed to the Help Desk, whose telephone number is 1-800-PTO-9199.

/F. Daniel Lopez/

F. Daniel Lopez
Primary Examiner
Art Unit 3745
September 26, 2009